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Official Abstract Form

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Start Shedding of fungal spores by hospital personnel. Burns, D.,* Streifel, A.J., Juni, B., Rhame, F.S. University of Minnesota, Minneapolis, MN 55455.

Nosocomial filamentous fungal infection in immunodeficient patients results from airborne fungal spores. Indoor spore sources subvert filtration systems. We quantified human fungal spore shedding in a rigorously cleaned, vertical flow, HEPA filtered 17m³ clean room (CR). Air samples were collected on inhibitory mold agar using a 700L/min Casella air sampler. Plates were incubated at 25°C and counted at 48 hr. Pathogenic species were identified at least to the genus level. The sampler vacuum was isolated in a separate HEPA filtered box. During operation CR air is spore free; with the fans off 12 1.4m³ samples had a mean of 1.0 fungal CFU (range 0-3); vigorously shaking the freshly washed walking mat for 5 min produced levels of 7 and 9 CFU/1.4m³, respectively.

56 trials (T) of 34 people were performed. With the fans off, subjects walked in a 1m circle for 5 min then gently patted their clothes (ankles to shoulders) for 2 min. Mean total shed CFU, presuming a zero baseline, were respectively, 38 T of 32 oncology and marrow transplant ward personnel: 850 CFU; 15 T of 2 persons in street clothes during the 3rd day of wear: 1700 CFU; and 5 T of a person in fresh operating room garb: 522 CFU. Fusarium and phycomycetes were recovered from 18% and 20% of the samples. No Aspergillus flavus or fumigatus were recovered.

Hospital personnel shed pathogenic fungal spores although the shedding rate should produce only a very small increase in spore levels in most hospital wards. Shedding rates were influenced by the time since last clothes laundering.

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